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See page 27

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Vol. 101 NOVEMBER 4, 1944 No. 9

CHARLES J. BRAND HONORED

Receives High Award from Chilean Government at Luncheon Attended by Leading Government Officials

IN APPRECIATION of his services to their country, the Chilean Government conferred upon Charles J. Brand, Executive Secretary and Treasurer of The National Fertilizer Association, Washington, D. C., the decorationof Comendador of the "Orden al Mérito," the highest honor awarded a non-Chilean.

The decoration was conferred upon Mr. Brand by the Ambassador of Chile on Thursday, October 19th, at a luncheon in his honor in the elaborately decorated Chinese Room of the Mayflower Hotel, Washington, D. C.

The occasion was attended by approximately 125 guests, among whom were a number of high Governmental and Military Officials of both the United States and Chile.

The decoration was beautifully presented by Ambassador Marcial Mora of Chile. His praise was well rounded and most graciously expressed in deep fondness. Later, Mr. Brand gave a responding address in which a slight tremble could be detected in his voice, this being most natural, when one finds his long efforts have borne fruit, as was so magnificently expounded by the Government of Chile.

Address of His Excellency Marcial Mora, Ambassador of Chile to the United States

Since my recent arrival in the United States, this is the first social function at which I have been privileged to preside. And it is especially pleasing for me that it should be for the purpose of honoring a worthy citizen of this country, who has been always a sincere and unselfish friend of Chile, Mr. Charles J. Brand.

Our "Orden al Mérito" was created by the Supreme Director Don Bernardo O'Higgins, the Father of Chilean independence, founder of our democracy, the precursor of the policy of Pan-American cooperation and solidarity.

It is with true pride that we Chileans recall that O'Higgins organized, together with San Martin, the Expedition of Liberation to Peru, contributing with his efforts to evidence our love for liberty and to proclaim, practically, the concept of continental unity, in the fight which ended Spanish domination and secured the independence of all South America.

More than a hundred years ago the Father of our Country desired that the "Orden al Mérito" should constitute an award, a distinction and an evidence of the recognition of non-Chileans, who had in some way given of their energies, talents, culture or sympathy in activities advancing the interests of our country.

It has been the practice of all the successive Administrations of the Republic of Chile to recognize the attributes of Commander of the "Orden al Mérito" with sober parsimony, in order to conform to the intention of O'Higgins only to distinguish those who may have accomplished some positive work of progress, welfare, affection, or of defense, for our country. With clear reason my Government has desired that I fasten on the breast of Mr. Charles J. Brand the insignia of Commander of our "Orden al Mérito."

As a matter of fact, Mr. Brand, who has been outstanding in the public service of the United States and in the field of scientific research, as well as having attained renown

in the coordination of economic factors, has kept in touch with the productive activities of Chile, always promoting the progress of our nitrate industry and the recognition of its legitimate expectations.

While we may here recall that it was with seeds brought from Limache, a small Chilean town, that Mr. Brand conducted the first investigations leading to the discovery of an Andean type of alfalfa (Andean Alfalfa), we should also mention his work in studies of the possible utilization of cornstalks for the manufacture of paper; his contribution to the solution of the problems affecting the processing and sale of cotton, and other administrative activities.

But above all, and in a very special manner, we must keep in mind his activities as a government distributor of Chilean nitrate among the farmers of this great country.

It is reasonable to mention the exemplary capacity of Mr. Brand in directing American Fruit Growers, Inc., in the discharge of the tasks of Agricultural Commissioner of the United States to Europe in 1923; in exercising the functions of Executive Secretary and Treasurer of The National Fertilizer Association; and for making such important contributions to the industry, with respect to the chemical fertilization of plants, which has brought so much benefit of all kinds.

The cooperation of Mr. Brand in the drafting of various important laws, his studies and publications, and his work as co-Administrator of the Agricultural Adjustment Administration and as Chairman of the American Committee of the International Institute of Agriculture, emphasizes, without doubt, his extraordinary merits.

Nevertheless, I wish particularly to refer to the inestimable service he has rendered to his country and simultaneously to my own, contributing in an important manner to the convenient distribution of our natural nitrate, with the consequent increase in the economic yield of United States agriculture.

The participation of Mr. Brand in the work of the Fourth Latin American Chemical Congress, held in Chile, made available studies of particular interest concerning the complex circumstances which affect the world industry of inorganic nitrogen. At the same time it furnished him a happy opportunity to observe our people, our democratic institutions, and our economic life, and to tell of what he saw, which represents a valuable contribution to the policy of rapprochement in good neighborliness and of complete solidarity in the common cause of democratic principles.

Doubtless, there exists many ways of being good neighbors, but in my judgment one of the most effective, which best reaches the hearts of men and peoples, consists in using facts which, while revealing esteem and sincerity, demonstrate at the same time that the present destiny and the future of our friends concern us, that their problems interest us, and that we are well disposed always to extend a friendly hand, to collaborate with them in seeking a course of action or to find solutions.

Mr. Brand has realized this human ideal of the good neighbor in preoccupying himself, with scientific criterion, with our nitrate industry, which constitutes a basic element of Chilean economy; and in interesting himself with all the force of his prestige and influence that this industry may attain the situation that in all justice corresponds to it among the huge projections of the world production of fertilizers.

Mr. Brand: In the name of His Excellency, The President of the Republic of Chile and of his Government, which orients its policy in a loyal feeling of Inter-American confraternity, and which recognizes good and true friends wherever they may be found, I have the pleasure and honor to confer upon you the "Orden al Mérito" of Chile with the rank of Commander; and at the same time to express to you my most cordial congratulations upon this meritorious award.

Reply by Charles J. Brand

YOUR EXCELLENCY AMBASSADOR MORA, DIRECTOR GENERAL ROWE, CHAIRMAN MCNUTT, MR. CLAYTON, FRIENDS AND ASSOCIATES:

May I first thank you all as a group for sharing with me in the honor that the Republic of Chile in its generosity has conferred upon me. And now may I thank you most especially, Mr. Ambassador, and were your distinguished predecessor, Rodolfo Michels, here today I would link him in my thanks, for without his earnest invitation to visit Chile in 1943 I am sure that my superior charms would not have impressed themselves sufficiently upon those fine officials of the Republic of Chile who have the duty and responsibility of deciding which non-Chileans shall receive the decorations of the Republic.

I must in justice mention a few other names. First of all, I cannot pass over the great courtesy that was shown me in Santiago by President Juan Antonio Rios through the courteous intermediation of Mr. Jorge Vidal,

the chief executive officer of the Corporacion de Ventas de Salitre y Yodo. Mr. Vidal and his associate, Mr. Florencio Garcia, who is with us today and who in his brotherly kindness served as the messenger to bring my decoration to the United States, were most helpful. I also must mention, because of the great contribution that he made to the success of my visit to Chile in 1943, Mr. J. Albert Woods, president of the Chilean Nitrate Sales Corporation in New York, who likewise is honoring me by his presence on this occasion.

Some or perhaps many of you may have received decorations from foreign governments and hence be practiced in the art of acceptance. This I confess is my first and I feel deeply moved and really at some loss as to what I should say.

THE SPEAKER'S TABLE
Left to right: Dr. Carlos Davila, former Ambassador of Chile to the U. S.; Dr. Leo S. Rowe, Director General, Pan American Union; Charles J. Brand; Ambassador Marcial Mora of Chile; Dr. Paul V. McNutt; Enrique Gajardo, Chilean Embassy Counselor and Minister-designate to Sweden; William L. Clayton, Surplus Property Administrator; Gen. Oscar Fuentes, Chilean Military Mission; Warren Lee Pierson, president, Export-Import Bank; Mario Illanes, Commercial Counselor, Chilean Embassy; Judge Justin Miller, U. S. Court of Appeals. In left foreground: Dr. L. H. Reichelderfer, former Commissioner of District of Columbia; C. S. Scofield, U. S. Department of Agriculture

I do not mention others who have helped me over the years, but it is not because their helpfulness is forgotten. Two other persons, however, I must name—Dr. Walter T. Swingle, who was my first chief in the Bureau of Plant Industry of the Department of Agriculture and who guided my feeble researching steps when I made the discovery that Andean alfalfa from Chile was a profoundly different variety from the ordinary Chilean type grown in California; and Mr. C. S. Scofield of the same organization whose

This is true, Mr. Ambassador. Never in a life of extended travel, visiting more than a score of countries, have I received the courteous, constructive, inspirited, and friendly treatment that was accorded me in your country. It seemed as if every door was opened to me and every kindness extended. Not only was I afforded an opportunity to visit the great Chilean nitrate industry and the almost equally great Chilean copper industry, but I was taken in charge by competent persons designated to be helpful to me

and shown a goodly segment of the agriculture, industry, and life of the Republic.

May I say to my American friends on this occasion that Chile is really an inspiriting, beautiful, and interesting country 2,650 miles long, averaging less than 125 miles wide, and with an area only slightly greater than the State of Texas. It has more than 5 million people, practically 98 per cent of whom are the direct descendants of the civilized white nations of Europe and America. Her schools are good and getting better. Although it is a Catholic country in essence, complete freedom of religion is granted. I, myself, a Presbyterian, enjoy the privilege of serving on the Board of Trustees of Santiago College, of which Mrs. Elisa Parda de Migel of New York is president, originally established by the Board of Missions of the Methodist Church but now broadened out so that many groups participate in its governance and support.

Chile and the United States have like political and social forms and ideals. Both are democracies. Both of us had to free ourselves from tyrannical mother nations. We performed this operation in 1776, Chile in 1810. We have a similarity of pursuits, agriculture being the greatest industry in both countries, and we have to an encouraging extent natural resources that should afford to the statesmen of government and business in both countries the opportunity for constructive international exchange of the products of labor.

Chile has a fine people, and I cannot pass without mentioning the respect and admiration that I feel for the type of workman that I met not only in the nitrate pampa but in the copper mines, on the farms, and elsewhere. Chile needs our constructive help in an economic sense and not in an eleemosynary sense. She has able leaders who know the best interests of their country and who serve them even when there are changes of government.

I close with this thought—a good neighbor in the human sense is a person who contributes to your well being and security, one upon whom you can count for help in time of emergency and need, in bad weather as well as good, one who sympathizes with you and with whom you can sympathize when problems and difficulties arise. Good neighborly nations are like good neighborly people: they help each other, understand each other, and, catching one another's spirit, defend each other. I leave you with three simple planks in a platform for deepening our good neighbor relations: (1) we must both have and deserve to have faith in each other; (2) we must learn to speak each other's language; (3) we must promote the utmost exchange between Chile and the United States of personalities who will contribute to the prevention of misunderstandings and the promotion of right understandings, for mutual knowledge of one another and confidence in one another are the common bond of the future.

Again, Mr. Ambassador, may I thank President Rios, you, and your associates both in Chile and the United States, for the honor conferred upon me, and you, my friends and associates, for sharing its receipt with me. As

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Ambassador Mora congratulates Mr. Brand after affixing decoration. At right: Paul V. McNutt, chairman, War Manpower Commission

General view of the luncheon guests. The staff of the National Fertilizer Association offices are seated at table in the center

Conserving Laboratory Manpower*

By PHILIP McG. SHUEY, *Savannah, Ga.*

DUE to the shortage of laboratory assistants caused by the war, chemists have through necessity been forced to exercise every means possible for saving steps and saving time without sacrificing accuracy.

The necessary steps as applied to the details of procedure have to be followed, but some can be shortened and footsteps can often be saved by improving the arrangement of the laboratory equipment.

The subject of this paper deals primarily with some common laboratory operations in an attempt to speed up the work.

Filtration

Whenever possible an operator will resort to filtering and washing under pressure, but it is often necessary to filter by gravity. It is a strange fact that a great many chemists have overlooked the art of fixing the filter paper in the funnel for the so-called gravity filtration whereby a solid column of the filtrate and washings will remain in the stem of the funnel throughout the entire operation resulting in the combined force of gravity and suction. This feature is particularly important when using paper of fine texture for holding a finely divided precipitate.

The simplest method for luting the paper to the surface of the funnel to this end appears to be as follows: first, fold the paper in the usual manner, then tear the upper corner of the inner fold starting approximately three-quarters of an inch from the crease so as to form a flap to prevent an air leak. Next insert the paper in the funnel with the thumb and forefinger. The funnel is next filled with water when the paper is pressed closely to the surface of the funnel. While the funnel is still full, the stem is closed with a finger of the other hand and, if paper has been properly luted, a column of water will remain in the stem after removing finger. If the column should break, it may usually be regained by forcing water from the jet of a wash-bottle around the edges of the paper and filling funnel to exhaust the air between the surfaces. Ribbed funnels have an advantage over the smooth type.

*A paper presented at the meeting of the Division of Fertilizer Chemistry, American Chemical Society, New York, September 11–15, 1944.

Weighing

Much time may be saved in weighing and calculating the results of the moisture determinations by having tared moisture dishes and weighing the amount in the dish placed on the right-hand balance pan, having the weight, of course, at the left. After drying, the dish and weights are again placed in the same positions, and the a mount of loss found represents the moisture. By this method, only a comparatively few weights are handled and no subtraction is made. In the case of taking five grams, it is merely a mental calculation in arriving at the percentage of moisture in a sample by pointing off and multiplying by two.

In weighing samples for the day's work, the use of two rectangular pieces of silver foil, approximately 1½ by 3 inches, and of equal weight, is far superior to the usual scoop. The latter is cumbersome and requires the use of a funnel and considerable brushing when transferring the weighed portion to the flask. The silver foil, being flexible, is rounded with a lip so that the sample may readily be transferred directly to the flask, however small the neck.

Ignition of Precipitates

In the ignition of precipitates over the Bunsen burner, great apprehension is often felt lest the paper burst into flame, thereby causing possible loss of some of the precipitate. It has been found that a wire gauze placed on top of the crucible or dish prevents the paper from bursting into flame, probably due to the partial exclusion of air and the conductivity of the wire gauze. After the combustible matter has been volatilized, the gauze may be removed. The method is much quicker than by heating for a considerable period over a very low safe flame to volatilize the combustible matter before the temperature is raised.

Substitution of Solutions and Making Up Standards

In the use of standard solutions, many are interchangeable. For example, tenth normal acid and alkali are usually employed when titrating magnesia (MgO), but if quarter normal is more readily at hand, as for nitrogen

determinations, it may also be used in titrating magnesia, in which case 1 ml. equals 0.005 gram of magnesia. Likewise, a normal solution of NaOH is usually employed in determining the acid-base balance of fertilizer but another alkali such as 0.3238 normal as is used for P_2O_5, which is always at hand, may be substituted, in which case 1 ml. equals 32.38 pounds of calcium carbonate ($CaCO_3$) per ton when the usual method is followed. Likewise a quarter normal solution may be employed in which case 1 ml. equals 25 pounds of calcium carbonate per ton.

In making up standard solutions of acids and alkalis, it appears more expedient to calculate the amount of strong acid or strong alkali required for a liter of the strength sought rather than work on a trial and error program in which numerous corrections are required and much time is consumed. In the former case, one trial will often hit the mark and, by keeping records, it may be repeated without any calculation save any small correction that may be found necessary. This method also serves as a better check on the accuracy of the strength.

The Determination of Nitrogen

There must have been a great deal of confusion concerning the determination of nitrogen until J. Kjeldahl, a Danish chemist, published his valuable paper giving his method in 1883. Since then many modifications have been invoked for the purpose of speeding up the digestion. The present A. O. A. C. methods call for mercury or copper as the catalyst with or without the addition of potassium sulphate or sodium sulphate to raise the boiling point. We all know that raising the boiling point hastens digestion, also that K_2SO_4 is superior to Na_2SO_4 in not caking so easily, and that mercury is superior to copper as a catalyst in point of time, but additional modifications have recently been suggested to shorten the digestion period. One is by F. M. Stubblefield and E. E. De Turk,[1] which depends upon the use of ferric sulphate and dipotassium phosphate along with mercury which shortens the period of digestion to thirty minutes. The method has been investigated by the A. O. A. C.,[2] but only two collaborators participated in the work as published, and probably this will be supplemented along with other work after the war.

A short method suggested by A. L. Prince, Associate Referee on Nitrogen, A. O. A. C.,[3] is to add 1 ml. of selenium oxychloride solution made by dissolving 25 ml. in 500 ml. of concentrated sulphuric acid, which is used in addition to the mercury. Collaborative work on this method will doubtless be undertaken in the near future.

When the amount of organic matter present is low, the digestion period is shortened by any method; also some materials digest more quickly than others.

It should be remembered that during the period of digestion, it is possible by the addition of too large an amount of potassium or sodium sulphate or other salts, or what amounts to the same thing, by distilling off too much of the sulphuric acid, that the boiling point can be so raised as to volatilize the ammonia either wholly or partially during the digestion period. This requires a state of fusion.

Ammonium nitrate is almost instantly soluble in the sulphuric-salicylic acid mixture, which is in marked contrast with sodium or potassium nitrate, so with the present general use of ammonium nitrate in fertilizers, the necessary period to allow to stand before beginning the digestion may be shortened.

The cooling interval between the digestion and distillation may be greatly shortened by placing the flasks in a rack outside on the window sill and after a few minutes adding gradually approximately 50 ml. of water. On cooling, the salts soon begin to crystallize when the rest of the water is added. By this method there are a number of reasons for the saving of time. First, the addition of the small volume greatly raises the temperature and causes evaporation. Second, dissolving the separated salts by the final addition of water has a decided cooling effect. By this method, even in summer, the interval between digestion and distillation can be brought to about fifteen minutes.

Determining Phosphoric Acid (P_2O_5)

In the preparation of solution in determining total P_2O_5, official method 8 (a) which consists of dissolving the weighed portion in 30 ml. of nitric acid and from 3 to 5 ml. hydrochloric acid is now applicable to the general run of complete fertilizers as the organic matter is low, but the addition of a few crystals of potassium chlorate greatly hastens the oxidation of the organic matter and shortens the necessary boiling period.

[1] *Industrial and Engineering Chemistry*, Analytical Edition, July, 1940.

[2] *Journal Association of Official Agricultural Chemists*, Vol. XXIV, May, 1941.

[3] Private Communication.

(Continued on page 26)

IT MAY BE

By SAMUEL L. VEITCH

Farmer Assets

The American farmer assets have increased 29 billions in 4 years. In 1940 their assets were 54 billions, and in 1944 they have increased to the fancy figure of 83 billions, and bear in mind 28 billions of this is in cash and liquid assets. Machinery and equipment now owned by farmers are worth 4 billions. From all current indication, it would seem the farmer is an excellent buying prospect.

Farm Machinery

WPB suddenly pulled one of those "now you see it—now you don't see it" acts. Recently it was announced farm machinery manufacturing would be removed from limitation controls. This was suddenly reversed. It may be, the reversal was due to pressure applied by the farm machinery manufacturers themselves for the reason they were not prepared to take full advantage of unlimited production.

1945 Crop Prospects

The quota set for 1945 crops is still being held up for final adjustment based on time of the end of German war. If Mr. Jones of WFA must make an announcement before the Germans holler "enough," he may decide to let it stay somewhere around the 1944 level. This would take out all element of chance.

Government Surplus Property

Disposal of Government surplus property has been marking time, and no doubt will continue until after elections. Then the name of J. B. Hutson, Commodity Credit president, may be mentioned as one of the members of the 3-man surplus property board.

Declaration of Independence Returns

The Librarian of Congress recently announced the return to Library of some of the Nation's most famous documents. For many months the public has been deprived of the thrill of gazing upon the originals because as a precautionary measure, many of the famous papers and books of the Library of Congress and the National Archives have been hidden away underground.

The Declaration of Independence was returned to its gold frame in the "Shrine of Liberty." It is covered with a yellow light-proof glass to prevent it from further fading. Age has made this document almost unreadable, but the famous oversized signature of John Hancock readily identifies it as the original and genuine. During the early stages of the war, facsimiles were shown, while the originals were resting in a secret hide-out.

Farm Credit

It may be Farm Credit agency consolidation will be delayed until next Congress acts. The Cooley bill is due to be sent back for further extensive hearings that will make action before January next to impossible.

Tax Revision

Don't expect much in the way of tax revision before the end of the year. It is very possible there will be some relief on excess profit tax rates which will apply to 1945. Congress, perhaps, will get around to it about the latter part of the first quarter of 1945.

New Prices on New Goods

It may be at the proper time newly manufactured goods will be scheduled at 1942 prices. On the other hand, this does not mean 1942 prices will be maintained. It, no doubt, will be just a springing board for OPA to take a dive.

Crop Insurance

Plans are being speeded up to hurry revival of crop insurance through, soon after Congress returns. Of course you know Congress gets back to take up matters pertaining to the War 7 D. A. E. (D. A. E. meaning "Days After Election"). Chances are rather remote that insurance will be extended beyond cotton and wheat.

Turkeys

Army is stepping on WFA and applying pressure to keep the turkey set-aside order in effect until 60 million pounds are obtained for military dinners during the holidays. Chances for civilian turkeys for Thanksgiving are fading since only about half the military requirements have been filled.

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New Staff Members

THE AMERICAN FERTILIZER, carrying through its policy to give its readers the very best in the field of the fertilizer industry, has recently added two new members to its staff. They come to THE AMERICAN FERTILIZER with many years of experience and it is confident the readers will appreciate and benefit from their broad knowledge with the problems of the fertilizer industry.

C. A. WHITTLE, Associate Editor

C. A. Whittle, Birmingham, Ala., has been appointed associate editor of THE AMERICAN FERTILIZER. For several years Mr. Whittle has been associated with fertilizer publications and was formerly managing editor of the Soil Improvement Committee of The National Fertilizer Association. He was state administrator of the Soil Conservation Service in Georgia and was formerly agricultural editor of the College of Agriculture of the University of Georgia. While serving as college editor, he was selected president of the American Association of Agricultural College Editors.

Mr. Whittle is a native of Tennessee, a graduate of the University of Tennessee, and began his career as a writer in the newspaper field. Publications devoted to plant food and soil management prepared by him have been widely used as teaching material.

His study of fertilizers and his experience in writing in this field, will, it is believed, add to the value of THE AMERICAN FERTILIZER as a national organ of the fertilizer industry. Residing in the South he will be in position to make southern contacts and serve the industry in that region while contributing to the industry as a whole. He will welcome from the industry any news concerning the fertilizer companies and will undertake to keep the trade abreast of the discoveries of experiment stations and the recommendations emanating from the Agricultural Extension Service.

Mr. Whittle's address is 206 St. Charles, Homewood, Birmingham 9, Ala.

E. A. HUNTER

THE AMERICAN FERTILIZER is glad to announce that E. A. Hunter, Atlanta, Ga., has been appointed as its southern advertising manager. Well known to the fertilizer trade, E. A. Hunter was for many years associated with the late Walter W. Brown, of Atlanta, as advertising manager of his various publi-

cations, one of which was devoted to the fertilizer industry.

Prompt and efficient handling of advertising accounts has characterized the services of E. A. Hunter, and won the confidence and respect of advertising managers in the fertilizer field and related industries.

THE AMERICAN FERTILIZER has made this appointment so as to give the trade in the South the most direct and efficient service possible by one who, through years of experience, understands the field and is well and favorably known to the trade.

E. A. Hunter's address is 2246 E. Lake Road, N. E., Atlanta, Ga.

Allocations May Be Removed from Potash and Nitrogen

The War Production Board may remove allocation controls from potash and nitrogen before January 1, 1945, Chemicals Bureau officials told the Superphosphate Producers Industry Advisory Committee at its recent meeting.

WPB explained that this contemplated action is in line with the WPB policy of lifting allocation controls from materials as soon as the supply-and-demand pattern makes such action practical.

The committee recommended that allocation controls be maintained on potash and nitrogen to assure a balanced supply to industry. However, if WPB controls are removed, the chemicals should be completely freed from governmental restrictions, they added.

As a result of increased Ordnance requirements, the quantity of nitrogen available to agriculture for the current fertilizer year will be less than was available last year, the committee was told.

For the first six months of 1945, approximately 1,200,000 tons of sulphuric acid (exclusive of Ordnance supplies) are expected to be available for the production of superphosphate, WPB said. This should result in the production of approximately 3,550,000 tons of superphosphate for this period, which is equivalent to production of superphosphate from both industry and Ordnance spent acid for the first six months of 1944.

The committee was asked to express an opinion on the construction of new superphosphate plants. In view of current sulphuric acid shortages, members said they felt that additional facilities were not desirable. However, on the basis of substantial supplies expected from Ordnance, the committee members said they were in accord with the idea if WPB and the War Food Administration decide that such facilities are desirable.

WPB officials estimated the production of phosphate rock for the fertilizer year ending June 30, 1945 as follows:

	Long Tons
Florida Rock	3,933,000
Tennessee	1,300,000
Western States	300,000
Total	5,533,000

Phosphate rock will be in sufficient supply for all presently anticipated superphosphate production for the current fertilizer year, WPB officials said.

Wells Elected Virginia-Carolina Director

George M. Wells, president of the Union Sulphur Company, has been elected a member of the Board of Directors of the Virginia-Carolina Chemical Corporation.

Eastern States Promotes Myers

Eastern States Farmers Exchange has announced the promotion of J. Raymond Myers to the position of superintendent of its fertilizer plant at Cambridge, Mass. Mr. Myers succeeds G. H. Moore, who has retired after serving in that position since 1931.

Powell To Head Smith Agricultural Chemical Company

At a meeting of the Board of Directors of the Smith Agricultural Chemical Company, Columbus, Ohio, John E. Powell was elected to the office of president which had been left vacant by the recent death of H. Albert Smith. Mr. Powell has been connected with the company for more than 25 years. He served as secretary until 1931 when he was advanced to the office of vice-president and later to executive vice-president.

Fertilizer a 4 Per Cent Expense

The cost of fertilizer and lime to farmers, including value of AAA and TVA free distribution, came to $425,000,000 in 1943, or 4 per cent of farm production expenses. Taxes took $448,000,000, operation of motor vehicles $724,000,000, and purchased feed over 2¼ billions.

Fertilizer Situation in the South

By C. A. WHITTLE

The outlook for next season's fertilizer business in the South has been brightened by better yields of crops than were expected. Though not a bumper crop, cotton yields are above the first estimates of the U. S. crop reporting service, and promises to exceed eleven million bales of lint. Other crops, including vegetables and fruits, on which fertilizers are generally applied, are reported fair to good. As a result, the southern farmer has a sizable increase of his purchasing power.

Southern fertilizer manufacturers are, in fact, not worried about a market. They can sell all the fertilizers they can make. Their worry is confined largely to production and distribution. Shortage of some important materials and shortage of labor are chief hindrances at present. Later on, distribution will be something to worry about.

Fertilizer Material Situation

If southern fertilizer manufacturers had all the labor they need, the shortage of materials would be more acute. As it stands now, the shortage is more potential than actual for most materials.

But in the case of organic nitrogen the impression prevails that the shortage that existed last season will persist, with prospect of very little change. Organic ammoniates are demanded by tobacco growers and are recommended by agricultural authorities for, at least, part of the nitrogen used on many crops in the sandy, coastal plain area. Cottonseed meal, fish meal and fish scrap, blood, and tankage previously relied upon as sources of organic nitrogen in the South, continue to go to the feed trade. The available non-feed nitrogenous material continues to fall far short of the needs of the industry. Southern manufacturers are reported pressing for every pound of organic nitrogen that can be obtained.

Diversion of a large part of ammonium nitrate into war channels has set the southern fertilizer manufacturers, who had been relying upon a supply of the material, to figuring out new formulas applicable to materials available, but hoping that the heavy shooting around the world may soon lighten and make more ammonium nitrate available.

Much concern is expressed over the sulphuric acid situation. Southern acidulators are fearful that the limited supply of sulphuric acid will cut short the production of superphosphate and prevent reaching the goal of increased production toward which they are earnestly striving. As in the case of ammonium nitrate, the war's needs come first. Phosphate pebble and rock production is reported sufficient but the sulphuric acid with which to treat the phosphate materials is the threat to the goal of increased phosphate production. In fact, a leading southern agriculturist, who has looked into the situation, has warned farmers that superphosphate may become the scarcest item among fertilizer materials.

Potash is reported arriving at fertilizer plants close to schedules and no fear is expressed that the demand will not be met.

Labor Situation

Fertilizer factory labor continues to fall short of needs. The chief hope of relief is farm labor after crops are harvested. The farm tenant offers the best opportunity. He with

(Continued on page 22)

BRADLEY & BAKER

FERTILIZER MATERIALS - FEEDSTUFFS

AGENTS - IMPORTERS - BROKERS

155 E. 44th Street
NEW YORK

BRANCHES

Clinton St. & Danville Ave.
Baltimore, Md.

505 Royster Building
Norfolk, Va.

Barnett Bank Building
Jacksonville, Fla.

504 Merchants Exchange Bldg., St. Louis, Mo.

FERTILIZER MATERIALS MARKET

NEW YORK

Farmers Urged to Accept Early Delivery of Fertilizers. More Sulphate of Ammonia for Midwest. Rumors Reported That Allocation of Nitrogen and Potash Will Stop at End of Year. Shortage of Sulphuric Acid Continues.

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, October 31, 1944.

Farmers are being warned again to order and accept delivery of their fertilizers immediately instead of waiting until they actually need materials in the spring. This procedure in the past year or so has helped fertilizer manufacturers as they, along with all other manufacturers in the fertilizer field, are feeling the pinch of the labor shortage. The spreading of their deliveries enables them to maintain considerably larger tonnage than if it was necessary to deliver in a short period.

Sulphate of Ammonia

In addition to the new allocations originally made, further small additional allocations were made to the Midwest. This additional material has helped the mixers who now seem to be getting sufficient sulphate for their needs.

Superphosphate

With the current shortage of sulphuric acid, it is now believed that the anticipated additional facilities for the manufacture of superphosphate will not be erected.

Potash

Production continues heavy and deliveries under allocations have been made regularly. Previously WPB advised that with cessation of hostilities in Europe, allocation would be discontinued but there is now a rumor that allocation of potash as well as nitrogen compounds may be discontinued before January 1, 1945.

Phosphate Rock

Production is sufficient to take care of all anticipated needs for manufacture of superphosphate.

BALTIMORE

No Change in Market Conditions. Easier Position in Sulphate of Ammonia Expected Shortly. Superphosphate Situation Shows No Improvement.

Exclusive Correspondence to "The American Fertilizer"

BALTIMORE, October 31, 1944.

There has not been any change in conditions in this section affecting the fertilizer industry since last report. The market on materials is also without feature.

Ammoniates.—There seems to be a slight easing up on tankage and blood, due to lighter demand for feeding purposes, but ceiling price is still so high as to almost make the use of organic ammoniates of this description prohibitive in fertilizer mixtures.

Castor Pomace.—Manufacturers are still not taking on any new business, and the situation continues tight.

Fish Scrap.—The fishing season is now at an end, and practically all fish scrap will be used for feeding purposes. There are no large stocks being carried over.

Sulphate of Ammonia.—There is a feeling in the trade that there may be some easing up in the situation on this commodity after the turn of the year. Of course, everything depends upon war conditions. In the meantime both sulphate and liquid ammonia are scarce and this condition will likely prevail until the European war draws to a close. Deliveries are still being made under allocations but in decreased quantities as compared to same period last year.

Nitrate of Soda.—It is still too early to ascertain whether it is possible to increase importation of the foreign product, but if not, there is bound to be a shortage before the next spring season comes around. The market remains unchanged at previously quoted levels.

Superphosphate. — With ever-increasing quantities of sulphate of ammonia being

"When the Frost is on the Pumpkin and the Fodder's in the shock"

Harvest days are over in many states. The grain is stored or at the mill, fruits and vegetables are in storage—the end of another season draws near. It's the time of year when farmers and Victory gardeners compare results and make plans for the future . . . and the merits of fertilizers will be discussed.

Will your fertilizer be praised? Will it be on the preferred list in 1945?

BUY AN EXTRA WAR BOND TODAY

One of the surest ways to hold and win fertilizer buyers is the use of Raymond Multi-Wall Paper Shipping Sacks. These quality Sacks give your fertilizer sales appeal and complete customer satisfaction. They are sift-proof, dust-proof, and water-resistant. CUSTOM BUILT. Made sewed or pasted with valve or open mouth. Printed or plain.

Plan now to give your fertilizers the advantages of these MODERN SHIPPING SACKS.

THE RAYMOND BAG COMPANY
MIDDLETOWN, OHIO.

utilized for National Defense purposes, no stocks of superphosphate are accumulating and the situation is very critical. Many of the dry mixers are anticipating their requirements so they will have the material on hand when needed for the spring season's business. The market remains unchanged at 65 cents per unit of A. P. A. in bulk, f. o. b. producer's works, Baltimore.

Potash.—Domestic producers are practically sold up and all fertilizer manufacturers are now getting deliveries under contracts previously booked.

Bone Meal.—Both raw and steamed bone meal are only offered in a limited way and the major part of the production is being used for feeding purposes.

Bags.—No change in the burlap situation as, while there will be an increase in the consumption of burlap bags particularly at southern consuming points, a large majority of manufacturers in this section will doubtless use paper bags during the coming spring season, due to the wide difference in price in favor of paper as compared to burlap.

CHARLESTON

Early Fertilizer Buying Less Than Last Fall. Lack of Nitrogen Solutions Hinders Production of Base Goods. Labor Shortage Affects Phosphate Rock Supply.

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, October 31, 1944.

The fertilizer manufacturers are urging the farmers to order mixed fertilizers early, but it has become evident now that the response so far this fall has not been up to the rate of last fall.

Organics.—No change in this situation as regards nitrogenous. Dried blood continues to sell to the feed trade at too high a price for the fertilizer manufacturers, and on hoof meal the supply situation continues very tight.

Sulphate of Ammonia.—It has recently been reported that mixers and manufacturers seem to be getting enough to satisfy their present needs.

Nitrogen Solutions.—The situation on this continues very bad as the allocations are still cut down. Fertilizer manufacturers are very much worried as it will affect their making up their base goods in time enough for the coming season.

Phosphate Rock.—It is hoped that there will be enough available for the production of superphosphate for the fertilizer season, but this is largely dependent on the labor situation.

PHILADELPHIA

Potash May Be Removed from Allocation Control. Organics More Plentiful but Out of Fertilizer Price Range. Sulphuric Acid Supply Still Short.

Exclusive Correspondence to "The American Fertilizer".

PHILADELPHIA, October 31, 1944.

A rumor has it that the Government may release potash from allocation controls before the first of the new year, owing to the fact that the production has kept up to demand. Otherwise, the market situation in this section was about as follows for the past couple of weeks:

Ammoniates.—Animal by-products, such as tankage and blood, although seemingly somewhat more plentiful, are still held at ceiling levels, which is ordinarily too high for fertilizer use. Lower-analysis organics (for conditioning purposes) are fairly scarce.

Sulphate of Ammonia.—Moves in routine manner under allocation regulations. Supply is reported good.

Nitrate of Soda.—It is expected that some Chilean material will be imported, and with the domestic production there should be sufficient to meet requirements as allocated.

Superphosphate.—The demand for this ma-

Manufacturers' Sales Agents for DOMESTIC
Sulphate of Ammonia
Ammonia Liquor :: Anhydrous Ammonia
HYDROCARBON PRODUCTS CO., INC.
500 Fifth Avenue, New York

terial keeps producers working at top speed, particularly as the limited supply of sulphuric acid is bothersome.

Bone Meal.—Still in demand, and prices continue firm.

Potash.—As mentioned above, there is a rumor that this may be removed from controls. The production is well maintained and sufficient for the demand.

Castor Pomace.—Very tight and supply not sufficient for demand.

TENNESSEE PHOSPHATE

Phosphate Production Volume at Peak in Spite of Manpower Shortage. Lower Bone Meal Prices Affected by Defluorinated Phosphate Output.

Exclusive Correspondence to "The American Fertilizer"

COLUMBIA, TENN., October 30, 1944.

With the continuation of good fall weather, all the tobacco is in the barn, much corn has already been gathered, and fall seedings of all kind are making good growth.

Phosphate operations are in full blast, with ample water in the streams and ponds. The only ripple on the surface is the severest manpower shortage known, due to the heavy drain on labor for the East Tennessee and other war plants. Some of them close by are taking skilled and common labor alike, at rates of pay with which, under wage freezing, the phosphate industry cannot compete. Still, shipments into all consuming channels are proceeding at a rate even larger than 1943, the largest previous year on record.

Up to the end of October shipments of ground rock to farmers for direct application have already exceeded shipments for entire 1943 by over 10 per cent. Allowing liberally for difficulties and interruptions, it is easy to see that total shipments for 1944 will run more than 25 per cent above 1943.

It will be remembered that the era of heaviest shipments and enormous increase of prices in this field came after the World War I in 1919 and 1920. There were then no OPA or other restrictions to hold down prices or wages, and royalties went to $3.00 and $4.00 per ton in the ground against the normal royalties of $1.00 per ton. During the period of 1921 to 1927, these had dropped to 15 to 25 cents per ton, above which they have never since risen. What will happen in the years to come when OPA dies and European demand is added to the unequaled present domestic demand is not easily predicted.

The apparent softening of prices asked for bone meal, together with the appearance on the market of significant offerings, indicates some effect of the increased amount of Government-produced fused and largely defluorinated phosphate expected to be under production at the new TVA plant at Godwin.

Preliminary cost estimates of that product were at $40.00 per ton, based on rock at $4.00 cost, but some recent estimates gave about $37.00 as the price at which cooperatives would sell. Whether this indicates improved cost figures, or Government contributions to make up the difference is not known.

CHICAGO

Volume in Fertilizer Organics Market at Subnormal Level. Some Supplies of Feed Materials Are Accumulating.

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, October 30, 1944.

Trading in the western organic market remains at a subnormal level. Demand continues active, but supply is lacking. Unless some relief from order M-368 for the first quarter of 1945 is given producers, the prospects are not encouraging.

Some trading occurred in steamed bone meal of which a comparatively light offering was made.

PULVERIZED MASCOT LIMESTONE
Trade Mark Registered

MAGNESIUM LIMESTONE
"It's a Dolomite"
American Limestone Company
Knoxville, Tenn.

To keep you supplied with Bags

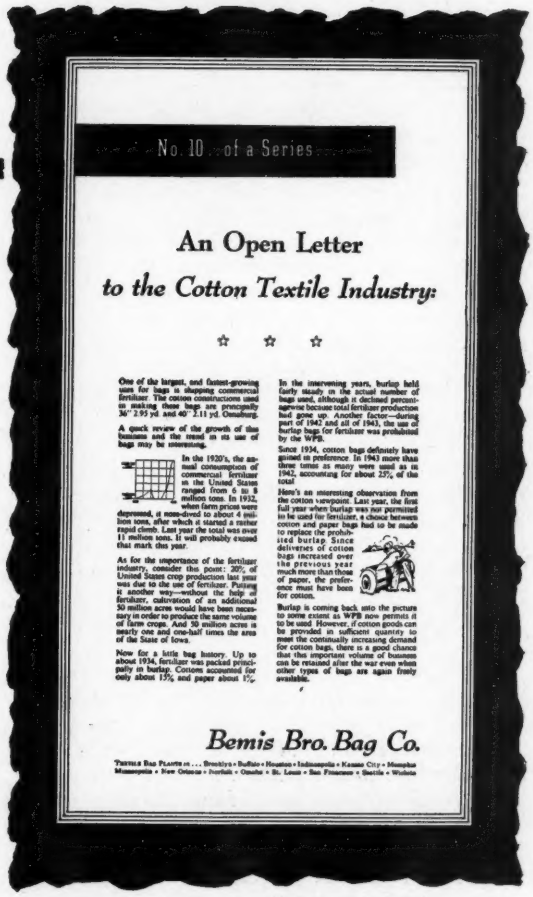
WE'RE NOT OVERLOOKING A SINGLE BET

THERE are many angles to the job of keeping the fertilizer industry supplied with bags in these days of shortages. But we're working on all of them! Here's an example:

A shortage of the necessary cotton cloth is, of course, a bottleneck. So, to supplement our usual close cooperation with the cotton industry, we took an unusual step —

An advertisement, appearing in the leading cotton textile newspaper, told the cotton merchants (1) *about the amazing growth of the essential fertilizer industry,* (2) *the need for bags for fertilizer and* (3) *the types of cotton goods particularly needed.*

The whole object of this unusual undertaking is to create a closer cooperation between the cotton textile and the bag industries . . . *to give you greater assurance of the supply of bags you need.*



No. 10 of a Series

An Open Letter

to the Cotton Textile Industry:

☆ ☆ ☆

One of the largest, and fastest-growing uses for bags is shipping commercial fertilizer. The cotton constructions used in making these bags are principally 36" 2.95 yd. and 40" 2.11 yd. Osnaburg.

A quick review of the growth of this business and the trend in its use of bags may be interesting.

In the 1920's, the annual consumption of commercial fertilizer in the United States ranged from 6 to 8 million tons. In 1932, when farm prices were depressed, it nose-dived to about 4 million tons, after which it started a rather rapid climb. Last year the total was over 11 million tons. It will probably exceed that mark this year.

As for the importance of the fertilizer industry, consider this point: 20% of United States crop production last year was due to the use of fertilizer. Putting it another way—without the help of fertilizer, cultivation of an additional 50 million acres would have been necessary in order to produce the same volume of farm crops. And 50 million acres is nearly one and one-half times the area of the State of Iowa.

Now for a little bag history. Up to about 1934, fertilizer was packed principally in burlap. Cottons accounted for only about 15%, and paper about 1%.

In the intervening years, burlap held fairly steady in the actual number of bags used, although it declined percentagewise because total fertilizer production had gone up. Another factor—during part of 1942 and all of 1943, the use of burlap bags for fertilizer was prohibited by the WPB.

Since 1934, cotton bags definitely have gained in preference. In 1943 more than three times as many were used as in 1942, accounting for about 25% of the total.

Here's an interesting observation from the cotton viewpoint. Last year, the first full year when burlap was not permitted to be used for fertilizer, a choice between cotton and paper bags had to be made to replace the prohibited burlap. Since deliveries of cotton bags increased over the previous year much more than those of paper, the preference must have been for cotton.

Burlap is coming back into the picture to some extent as WPB now permits it to be used. However, if cotton goods can be provided in sufficient quantity to meet the continually increasing demand for cotton bags, there is a good chance that this important volume of business can be retained after the war even when other types of bags are again freely available.

Bemis Bro. Bag Co.

TEXTILE BAG PLANTS IN . . . Brooklyn • Buffalo • Houston • Indianapolis • Kansas City • Memphis Minneapolis • New Orleans • Norfolk • Omaha • St. Louis • San Francisco • Seattle • Wichita

This is a greatly reduced reproduction of the advertisement to the cotton textile industry, telling how cotton goods are required for bags for fertilizer. Copy will be sent you on request.

BEMIS BRO. BAG CO.

Baltimore • Boston • Brooklyn • Buffalo • Charlotte
Chicago • Denver • Detroit • East Pepperell • Houston
Indianapolis • Kansas City • Los Angeles • Louisville
Memphis • Minneapolis • Mobile • New Orleans • New
York City • Norfolk • Oklahoma City • Omaha • Peoria
St. Helens, Ore. • St. Louis • Salina • Salt Lake City
San Francisco • Seattle • Wichita • Wilmington, Calif.

East Pepperell, Mass.

The feed situation is rather spotty. Meat meal, particularly in southern plants, is not moving at ceilings, and accumulations are growing.

Ceiling prices are:

High grade ground fertilizer tankage, $3.85 to $4.00 ($4.68 to $4.86 per unit N) and 10 cents; standard grades crushed feeding tankage, $5.53 per unit ammonia ($6.72 per unit N); blood, $5.53 ($6.72 per unit N); dry rendered tankage, $1.25 per unit of protein, f. o. b. producing points.

FERTILIZER SITUATION IN THE SOUTH

(Continued from page 16)

his family is usually first to complete cotton picking. Those deferred from draft have to get permission to go to other jobs. So great is the demand for labor in war industries at high wages that competition arises but where the laborer wants to maintain his farm status and live at home, a local fertilizer plant has an opportunity to land him.

Comparatively few fertilizer plants grouped in city or community have been able to get war prisoners. Most plants cannot hope for relief from this source. Some women, mainly husky Negroes, have been successfully used in some plants. But on the whole, the labor situation continues to be a serious problem.

Early Farm Movement of Fertilizers

The Agricultural Extension Service of all States in the South have renewed their campaigns for early ordering and early acceptance of fertilizer shipments. Some of the warnings issued by these agencies express the belief that early ordering is needed more than ever. The campaign was very successful in the South last season and is to be credited for the very heavy early movement of fertilizers to the farms.

The fertilizer manufacturers hope that the campaign for the early movement of fertilizers for the coming season will be equally successful, if not more so. It is obvious that manufacturers can produce more if the manufactured fertilizers are cleared from the plant as they are made. In fact, storage of materials is already restricting operations in many southern plants, and clearance of mixed goods is very essential to the progress of production.

Of course, the fertilizer industry, through its agents, dealers and its own publicity, is joining with the county agricultural agents in the early-ordering campaign.

A. O. A. C. Makes Few Changes in Official Definitions

New methods of analysis and changes in existing methods for the testing of foods, drugs, fertilizers, cosmetics, insecticides, and other products of the chemical and allied industries were reviewed at the fifty-ninth annual meeting of the Association of Official Agricultural Chemists, held in the Hotel Statler, Washington, October 26th and 27th.

Added importance was given to the meeting by two factors, one being the drive now underway by the Food and Drug Administration for higher standards of sanitation in drug and food manufacturing plants, and the other the fact that the sixth edition of the "Book of Methods of Analysis" is now in the final stages of preparation and soon will be going to press. The sessions drew the largest attendance of any meeting of the association, approximately 425 representatives of State bodies, colleges, and industry being registered.

Attention was given to the new, powerful insecticide, DDT, and studies which have been made during the past year are to be continued in the ensuing year, together with other analytical studies on fluorine, nicotine, rodenticides, and disinfectants.

Among actions taken at the meeting was the approval of recommendations that the group again give its approval to a proposal that bags of fertilizer nitrates carry a warning label that such fertilizers are "injurious to livestock."

The group also voted its approval of "official, first action" that guaranteed fertilizer component, with the exception of potash (K_2O) and phosphoric acid (P_2O_5), "shall be stated in terms of elements."

Official final action was given to these defi-

(Continued on page 24)

STEDMAN
FERTILIZER PLANT EQUIPMENT
Dependable for more than 50 Years

All-Steel Self-Contained Fertilizer Mixing Units
Batch Mixers—Dry Batching
Pan Mixers—Wet Mixing
Swing Hammer and Cage Type Tailings Pulverizers
Vibrating Screens
Dust Weigh Hoppers
Acid Weigh Scales

STEDMAN'S FOUNDRY & MACHINE WORKS
AURORA, INDIANA, U.S.A. Founded 1826

SAVE TIME AND MONEY

In Manufacturing Operations

Produce Fertilizers with

Greater Quality Appeal

by depending on

International

CROP-PRODUCING FERTILIZER MATERIALS

- Uniform Quality
- Excellent Mechanical Condition
- Volume for Your Requirements
- Prompt, Efficient Service

Florida Pebble Phosphate Rock
68%—70%—72%—75%—77%

Tennessee Phosphate Rock
66%—68%—72%

Superphosphate
Multiple Superphosphate

Domestic Potash Salts

All Standard Grades of Potash
Including SUL-PO-MAG

(Sulphate of Potash-Magnesia)

Complete Fertilizers

MINERALS
CHEMICALS

International

MINERALS & CHEMICAL CORPORATION

General Offices • 20 North Wacker Drive • Chicago
Mining and Manufacturing

PHOSPHATE • POTASH • FERTILIZER • CHEMICALS

nitions and interpretations of fertilizer ingredients:

Magnesia (magnesium oxide) is a product consisting chiefly of the oxide of magnesium. Its grade shall be stipulated, for example—magnesia, 75 per cent MgO.

Ammonium nitrate is a product composed chiefly of nitrate of ammonia. Its nitrogen content shall be stipulated, for example—ammonium nitrate, 30 per cent N.

A new official slate was elected for the coming year, being: President, W. H. Ross of the Fertilizer Division of the Bureau of Plant Industry, Beltsville, Md.; vice-president, J. O. Clarke, of the Food and Drug Administration laboratory, Chicago; secretary-treasurer, Henry A. Lepper, of the Food and Drug Administration, Washington. Elected to membership on the executive committee were: G. G. Frary, Vermillion, S. D., retiring president; G. H. Marsh, Montgomery, Ala.; W. A. Queen, Washington; and L. S. Walker, Birmingham, Vt.

The members and guests of the association were entertained at dinner on October 25th by the Chemical Control Committee of the National Fertilizer Association. Charles J. Brand, executive secretary and treasurer of the association, presided. Information on the current status and the discernible future of agricultural chemicals was given by P. M. Groggins, of the War Food Administration; Dale Kiefer, of the War Production Board; and Cedric G. Gran, of the Office of Price Information.

Middle West Fertilizer Conference

Over 100 persons attended the Middle West Fertilizer Conference, Chicago, October 25th, including about 35 agronomists representing 11 Midwestern States, and most all fertilizer companies that sell in the area.

The meeting was called to order by George Kingsbury, who asked Dr. Robert E. Yoder of Ohio to preside. The forenoon discussion centered around the plowing-under of fertilizers. The agronomists presented their observations, including data from demonstrations and experiments. As the results ranged from exceptionally good in some cases to very poor in others, with every gradation between, it is apparent that there is need for further and more careful research to determine the place of the plow-under method. The International Harvester Company has sold over 8,000 attachments for their plows, and other implement companies are placing attachments on the market. The experience of the purchasers of these attachments will be very helpful. To date the testimony of farmers is more convincing than the experimental results. The most enthusiastic advocates of the method are the producers of hybrid seed corn and other high-acre-value crops. It was generally agreed that row application is necessary to get best results with the heavy application which is plowed under.

The afternoon discussion was devoted almost entirely to an appraisal of the potential postwar market for fertilizer in the Middle West. The chairman invited H. R. Smalley, Chief Agronomist of the National Fertilizer Association, to make a brief statement. He said that postwar consumption will depend upon (1) the level of farm prices, (2) the acreages of crops grown, and (3) educational programs. The Midwest used only 8 per cent of the total U. S. tonnage in 1910, 18 per cent in 1943. In nine Midwest States only 20 per cent of the corn acreage is fertilized at an average rate of 140 pounds per acre; 63 per cent of the wheat acreage is fertilized at about 200 pounds per acre; 13 per cent of the oat acreage is fertilized at 165 pounds per acre; and only 5 per cent of the plowable

• SOUTHERN PHOSPHATE CORPORATION •

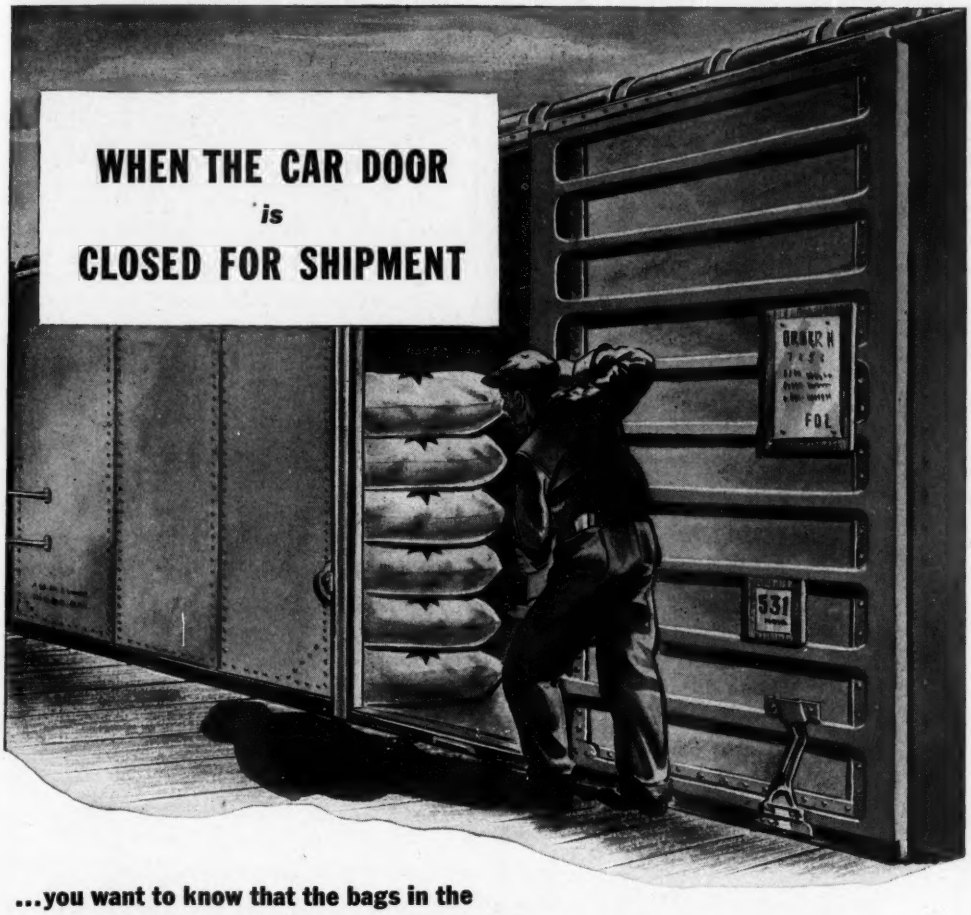
Miners of FLORIDA LAND PEBBLE

PHOSPHATE ROCK

—all commercial grades!

Plants at Sangully, Pauway, Medulla and Ridgewood, Fla.

MAIN OFFICE • 342 Madison Avenue • NEW YORK CITY



...you want to know that the bags in the car contain the best fertilizer you can make

AMMONIATION with Urea-Ammonia Liquor is an important step toward production of a good crop-producing, readily drillable fertilizer.

Du Pont offers four Urea-Ammonia Liquors—one or more of these will meet your requirements.

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Great stars in great radio plays make great entertainment... tune in Cavalcade of America—NBC network—every Monday evening

DU PONT UREA-AMMONIA LIQUORS

URAMON*

FERTILIZER COMPOUND

DU PONT BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

*REG. U. S. PAT. OFF.

pasture acreage is fertilized at about 160 pounds per acre. Fertilizers used in nine States supply only 1 per cent of the nitrogen, 29 per cent of the available phosphoric acid, and 12 per cent of the potash which is removed from the soil in the harvested portions of crops.

Dr. F. W. Parker pointed out that the potential supply of nitrogen following the war will be larger than any reasonable expectation as to use. He also stated that, although farm income is the largest factor in determining fertilizer consumption, it is now as big a factor in newer territory as in areas where fertilizer use has become firmly established.

The agronomists from each of the States represented presented their estimates as to the quantities of plant food that it would pay farmers to use and the total of these estimates was more than double present sales in the Middle West. These figures were not presented as requirements which must be met in order to reach production goals, but several agronomists pointed out that it would be more efficient for farmers to reduce somewhat their acreages of row crops in the postwar period and to maintain their total production of these crops through increased fertilizer use.

ALEX. M. McIVER & SON

Official Brokers for

MILORGANITE

Specializing

Nitrogenous Materials

Blood and Fertilizer Tankage

Phosphate Rock

Bone Meals

Manganese Sulphate

SOUTH AMERICAN DRY RENDERED TANKAGE

PEOPLES OFFICE BUILDING
Charleston, S. C.

CONSERVING LABORATORY MANPOWER

(Continued from page 12)

An experiment was made on a sample of phosphate rock, and the same figures were obtained with and without the addition of potassium chlorate, showing it does not affect results.

In the precipitation of P_2O_5, the usual practice is to first neutralize before adding the molybdate solution. It has been found after many years of experience that this process is unnecessary when nitric acid has been used as the primary solvent. It is only necessary to add ammonium nitrate solution. But when sulphuric acid has been used as the solvent, it is quite necessary to neutralize.

Agitation

A mechanical stirrer or shaker may be used to greatly hasten the precipitation of magnesia after the strong ammonia has been added, and the writer often uses this method, stirring the magnesia along with the phosphoric acid determinations, only extending the stirring period of the magnesia to an hour.

Mechanical agitation and a heat control system for the citrate digestion similar to that proposed by MacIntire and co-workers[4] would be a great aid to the fertilizer chemist, and the agitation could be conducted intermittently by having an electric circuit breaker so as to conform with the present A. O. A. C. method.

Summary

A method for increasing the speed of filtering and washing by gravity is given; also a rapid method for weighing up moistures; a convenient way of transferring weighed portions into flasks is shown; an improved method is given for burning precipitates. Suggestions are made concerning the substitution of certain standard solutions for others; also for making up standard solutions. Recent work for shortening the Kjeldahl digestion period for nitrogen is mentioned, and a method for shortening the cooling period between digestion and distillation is offered. A method which is supplementary to the use of nitric and hydrochloric acids in the oxidation of organic matter is offered and neutralizing before the subsequent precipitation may be omitted. Speeding up the magnesia precipitation is suggested, and mention is made of a mechanical agitator and automatic heat control in making the citrate digestion.

[4] *Journal Association of Official Agricultural Chemists*, Vol. XXVII, May, 1942.

WILLIAM C. WELLMANN
BROKER
Baltimore, Maryland

Specializing in

Sulphate of Ammonia
Low Grade Ammoniates
Superphosphate
Sulphuric Acid
Bags

Inquiries and offerings invited

KEYSER BUILDING

Keyed SERVICE!

Fertilizer plants all over the country—large and small—state their needs and we meet them. Large stocks of seasoned materials and ample modern production facilities enable us to make prompt shipments.

TRIPLE SUPERPHOSPHATE

46 to 48% Available Phosphoric Acid

•

We also manufacture
HIGH-GRADE SUPERPHOSPHATE

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155 East 44th St.
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A Mark of FLORIDA TRIPLE PHOSPHATE *Reliability*

SPECIFY
THREE ELEPHANT
BORAX

REG. U.S. PAT. OFF. REG. U.S. PAT. OFF.

. . . . WHEN BORON IS NEEDED TO CORRECT A DEFICIENCY OF THIS IMPORTANT SECONDARY ELEMENT

Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

AMERICAN POTASH & CHEMICAL CORPORATION
122 East 42nd ST., NEW YORK CITY
Pioneer Producers of Muriate of Potash in America
See Page 4

CHARLES J. BRAND HONORED

(Continued from page 10)

time goes on I shall hope to deserve the honor more truly than I do at this moment.

Mr. Brand's Outstanding Career

The Republic of Chile has made two contributions to North American agriculture that all will agree were and are of great value.

The first was nitrate of soda which was shipped from Chile to Norfolk, Va., in 1830. The second was the invaluable hay and forage crop, alfalfa, which was brought from Chile to California in 1854. It is today perhaps the most important animal feed grown in the Americas.

It has been the privilege of Charles J. Brand to add to the value of both of these contributions.

The work of Mr. Brand since his student days at the University of Minnesota has been associated with the economics of agriculture. He is a recognized leader in agriculture, both in this country and abroad.

Entering the United States Department of Agriculture as a young man, he served first as plant physiologist in charge of Clover and Alfalfa Investigations. His work in that capacity gave him his first opportunity to serve the joint interests of North and South America. So far as American observers are concerned, he was the first to discover that the alfalfa now known in the United States as Andean or Peruvian alfalfa differed profoundly from the ordinary kind brought in from Chile in 1854. In recent years this discovery has resulted in the planting in the United States of thousands of acres of that variety of alfalfa. That first Andean seed used by Mr. Brand in his experiments came from Limache, Chile, and was supplied by a well-known Chilean, Mr. Adolpho Eastman, whose large hacienda is near Limache.

Later Mr. Brand was in charge of Paper Plant Investigations and Cotton Handling and Marketing. His outstanding achievement in the Department of Agriculture was the organization in 1913 and the administration of the Bureau of Markets which has been expanded into the Bureau of Agricultural Economics, the Agricultural Marketing Service, and other related agencies. The Department publication, *Some Landmarks in the History of the Department of Agriculture*, issued in 1942, says of this bureau:

"Under the leadership of Charles J. Brand it rapidly became one of the spearheads in the vigorous attack on economic and social problems and advanced through various organizational steps to become in a few years one of the largest bureaus in the Department."

Nitrate Distributor During World War I

Mr. Brand's activities prior to and during the first World War covered both production and distribution of agricultural commodities. With the approval of President Wilson, the then Secretary of Agriculture, Hon. David Franklin Houston, charged him with responsibility, as Federal nitrate distributor, for handling a Government revolving fund of $10,000,000 in the purchase and distribution of Chilean nitrate of soda to American farmers. That nitrate of soda, provided to more than 100,000 farmers, made a material contribution to the production of food, feed, and fiber crops needed in America and Europe during World War I.

Following the war he was vice-president and general manager for several years of American Fruit Growers, Inc., with its far-flung operations of orchards and truck crop farms and distribution of perishable products. In this connection Mr. Brand extended his knowledge of Latin America by an intensive study in 1920 of the banana, pineapple, and mango industries of Mexico.

In 1923, the Government having called him back into its service, he made a survey, as Agricultural Commissioner of the United States to Europe, of the distribution of Chilean nitrate of soda in the United Kingdom and the countries of Western Europe.

Secretary of N. F. A.

Since 1925, Mr. Brand has been Executive Secretary and Treasurer of The National Fertilizer Association where, among his other duties, he has been in constant contact with the Chilean nitrate industry.

(Continued on page 30)

SULPHATE OF AMMONIA AMMONIA LIQUOR
NITROGEN PRODUCTS, INC.
630 Fifth Avenue—Radio City NEW YORK 20, N. Y.
Sales Agent
AGRICULTURAL AND INDUSTRIAL CHEMICALS
Benzol Toluol Xylol

Perhaps I'm one war older than you are!

Believe me, after the last war I saw what happened. Will you let me give you some advice?

•

If you've got a job today—for your own sake, fellow, be smart! Think twice before you fight for a wage increase that might force prices up and land you behind the eight-ball in the end.

Salt away as much as you can out of your present wages. Put money in the bank, pay up your debts, buy more life insurance. Above all, put every extra penny you can lay your hands on into Uncle Sam's War Bonds.

Nobody knows what's coming when the Germans and the Japs are licked. Perhaps we'll have good times. Okay. You'll be sitting pretty. Perhaps we'll have bad times. Then they're sure to hit hardest on the guy with nothing saved.

The best thing you can do for your country right now is not to buy a thing you can get along without. That helps keep prices down, heads off inflation, helps to insure good times after the war.

And the best thing you can do for your own sake, brother, if there *should* be a depression ahead, is to get your finances organized on a sound basis of paid-up debts—and have a little money laid by to see you through!

4 THINGS TO DO
to keep prices down
and help avoid another depression

1. Buy only what you really need.

2. When you buy, pay no more than ceiling price. Pay your ration points in full.

3. Keep your *own* prices down. Don't take advantage of war conditions to ask for more—for your labor, your services, or the goods you sell.

4. *Save.* Buy and hold all the War Bonds you can afford—to help pay for the war and insure your future. Keep up your insurance.

A United States War message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America.

In 1929, to fit him to serve his industry better, his Board of Directors sent him to Europe to study the synthetic and by-product nitrogen industries in England, Germany, Belgium, Holland, and Norway. His published reports and public addresses have contributed to a more balanced understanding of world nitrogen problems. Again in 1938 his Board enabled him to make further contributions by attending the International Congress on Chemical Fertilizers in Rome where he presented three papers on the formal programs.

In World War II also Mr. Brand has led his organization in rendering highly useful service to agriculture and to the chemical plant food industry. Not only the nitrogen producers and distributors, but the superphosphate and potash industries as well have benefited from his work. He has been a leader in cooperating with the war emergency agencies in helping to achieve the farm production goals, so important not only to the United States but to others as well.

Not least among the public services rendered by Mr. Brand has been his work in the drafting of legislation. Early in 1917 he and his group prepared the Food Control Act which was administered during the First World War by Herbert Hoover who afterwards became President of the United States. Among other legislation which he assisted in drafting are the United States grain standards and cotton futures Acts and the Agricultural Adjustment Act of 1933.

Co-administrator of A. A. A.

When the Agricultural Adjustment Administration began to function under President Roosevelt in the spring of 1933, Mr. Brand was appointed co-Administrator with the late George N. Peek, under an arrangement with the Directors of his Association for the temporary loan of his services to the Government. Later he was Executive Director of the Code Authority charged with the administration of the Code of Fair Competition for the Fertilizer Industry under the National Industrial Recovery Act.

He has served with distinction in other public and private industries; especially has he taken an active part in the work of the International Chamber of Commerce, attending its Congresses in Rome, Amsterdam, Berlin, and Washington, and in numerous Pan-American conferences.

Mr. Brand's interest in agriculture is world-wide. He is Chairman of the American Committee on the International Institute of Agriculture. That institution, to which 55 nations adhered in the prewar period, has for more than 35 years been the chief source of reliable international agricultural statistics. Happily its records at its headquarters at Rome are still intact.

Delegate to South American Meeting

When the Government of Chile in 1942 decided to sponsor and call the Fourth South American Congress of Chemistry, the then Ambassador of Chile to the United States, Rodolfo Michels, invited Mr. Brand to attend as a special delegate. His governing board again gave ready consent to undertake the mission, no doubt having in mind, among other things, the good that would come to both countries from a study by him on the ground of the complex national and international conditions that affect the world inorganic nitrogen industry — synthetic, by-product, and natural. Chile also is an ally of the United States in this war. Mr. Brand's published reports and interviews and public addresses on his observations in Chile have provided a real contribution to the Good Neighbor policy in the Americas.

Because of his active interest in Latin American educational progress, Mr. Brand has been elected to the Board of Trustees of Santiago College for Women. Mrs. Elisa Parada de Migel of New York, a native of Chile and a graduate of the College, is president of this Board.

It was no doubt in recognition of matters such as are recited in this story that the Government of Chile, with the approval of its distinguished President, Juan Antonio Rios, with whom Mr. Brand had an extended conference in Chile in 1943, conferred the decoration of Comendador of the "Orden al Mérito" upon Mr. Brand.

BUYERS' GUIDE • A CLASSIFIED INDEX TO ALL THE ADVERTISERS IN "THE AMERICAN FERTILIZER"

This list contains representative concerns in the Commercial Fertilizer Industry, Including fertilizer manufacturers, machinery and equipment manufacturers, dealers in and manufacturers of commercial fertilizer materials and supplies, brokers, chemists, etc.
For Alphabetical List of Advertisers, see page 33.

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Barrett Division, The, Allied Chemical & Dye Corp., New York City.
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Nitrogen Products, Inc., New York City

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Wellmann, William E., Baltimore, Md.

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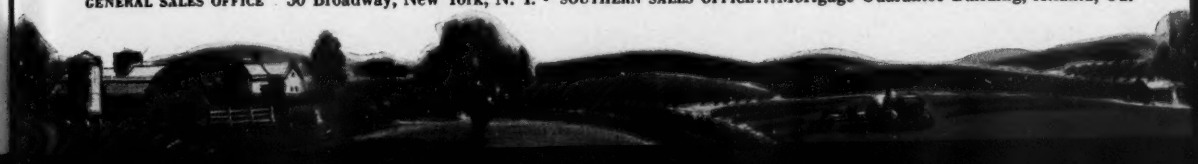

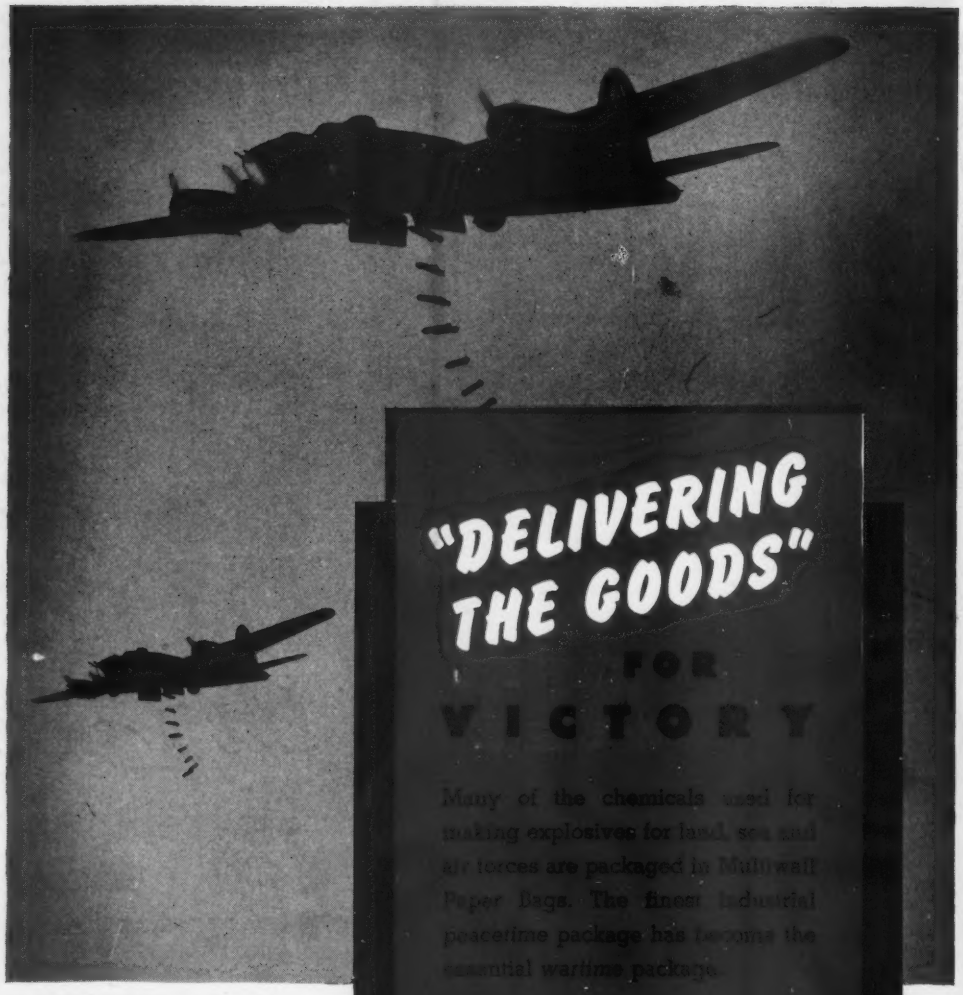
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